



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/631,860	08/01/2003	Shinji Ichikawa	240337US-2 DIV	9154

22850 7590 08/09/2004

OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C.  
1940 DUKE STREET  
ALEXANDRIA, VA 22314

EXAMINER

MILLER, BRIAN E

ART UNIT	PAPER NUMBER
----------	--------------

2652

DATE MAILED: 08/09/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/631,860	Applicant(s) ICHIKAWA ET AL.	
	Examiner Brian E. Miller	Art Unit 2652	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 01 August 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-3 and 6-8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 6-8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☒ Certified copies of the priority documents have been received in Application No. 09/615,776.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>8/1/03</u> . | 6) <input type="checkbox"/> Other: _____  |

Art Unit: 2652

This application is a DIV of 09/615,776 and claims 1-3, 6-8 are now pending.

### *Specification*

1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.
2. Claims 1-3, 6-8 are objected to because of the following informalities: the term "actuator" should be changed to "microactuator" since an "actuator" is known in the art as the main moving device for the suspension, and a "microactuator" is known to be a secondary moving device for fine adjustments of the head. Correction is requested to avoid confusion. Appropriate correction is required.

### *Claim Rejections - 35 USC § 112*

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:  

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
4. Claim 6 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. (a) Claim 6, recites "an interconnecting pattern including a wire...and a grounding wire" and further in the claim recites "said interconnecting pattern comprising a close-contact wire...and a floating wire..." It is not apparent from this language how many wires make up the interconnecting pattern, i.e., are the "wire" and "grounding wire" the same as the "close-contact wire and the "floating wire"?

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 1-3, 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Crane (US 6,046,884). (As per claims 1-3 & 6) Crane discloses a read/write system and head supporting mechanism, as shown generally in FIGs. 1-3, including a suspension 22 (102); microactuator/slider assembly 20 which includes a slider body 56 and a microactuator structure 58, the slider which carries a transducer (not shown) is attached to the microactuator accordingly. Crane discloses various configurations and includes ones in which the microactuator is disposed between the slider and the suspension (see col. 4, line 63-col. 4, line 12) and wherein the microactuator/slider includes an electrically conductive region, i.e., ground electrode, 119 (FIG. 3A) which are electrically coupled to the suspension 102, such that suspension 102 acts as a ground plane for the slider/microactuator assembly (see col. 6, lines 24-32). Although the actual "electrical connecting member" is not explicitly shown, it is at least inherent from the description, i.e., "a plurality of electrical terminals 119 (shown in phantom), some of which may

Art Unit: 2652

be *electrically coupled* to suspension 102 such as the suspension 102 acts as a ground plane for the microactuator.” (emphasis added by the Examiner).

Further, although Crane discloses the slider/microactuator can be integral or separate structures, the patent remains silent as to specifically stating that the slider, in turn, is electrically connected to the slider, as called for in claims 1, 6 & 7.

Kudo et al discloses a suspension/slider assembly, e.g., see FIGs. 7, 9-11, which includes using the suspension 30 as a grounding plane (electrode 35, 105) and electrically grounding the slider thereto (see also col. 5, lines 53-64 & col. 6, lines 33-43). So, while different embodiments are shown, it is clear from the teachings, that grounding the microactuator and/or slider to the suspension or terminal, is an important consideration in head suspensions, in order to reduce damage to the ever increasing sensitivity of read/write heads.

With respect to claims 6-7, the “interconnecting pattern” includes a “floating” or grounding wire (between terminals 119) and a “close-contact wire”, e.g., control wires or flex circuit traces (see col. 10, line 11 & col. 6, lines 28-29 of Crane), which wires are not shown but are conventional in the art. It is noted that Kudo et al shows a typical interconnecting pattern of flex circuitry and such a configuration would have readily utilized in Crane.

With respect to claim 7, the “flexible region” of the suspension is considered to include bridge structure 50/54 which is curved or bent towards the slider/microactuator assembly.

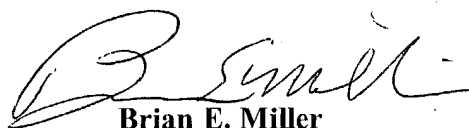
Art Unit: 2652

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian E. Miller whose telephone number is (703) 308-2850. The examiner can normally be reached on M-TH 7:15am-4:45pm (and every other friday).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoa T. Nguyen can be reached on (703) 305-9687. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



**Brian E. Miller**  
**Primary Examiner**  
**Art Unit 2652**

Bem  
August 4, 2004